Mini HW 3 for Module 1:

• In the provided Sobel.c code, the dimensions of the xmask is 3x3, and hence MR is 1. Suppose the dimensions of xmask had been 7x7, what would the value of MR need to be?

6. mr is the mask radius.

• In the provided Sobel.c code, what is the purpose of the “b” in “wb” and “rb” for fopen?

binary.

• In the provided Sobel.c code, why does the double-for loop process have the mr in the code? i.e., why do the loops go for

for (i=mr;i<256-mr;i++)

for (j=mr;j<256-mr;j++)

mr needs to be included in the four loop. This masks acts as an inner margin, so that the convolution does not go out of bounds of the 2D image array.

• In the provided Sobel.c code, what is the purpose of maxival, and explain why the code has the line

ival[i][j] = (ival[i][j] / maxival) \* 255;

Normailize the value of each pixel. Then multiply the normalized value of the pixel by 255 since RGB values are in the range of [0, 255]/